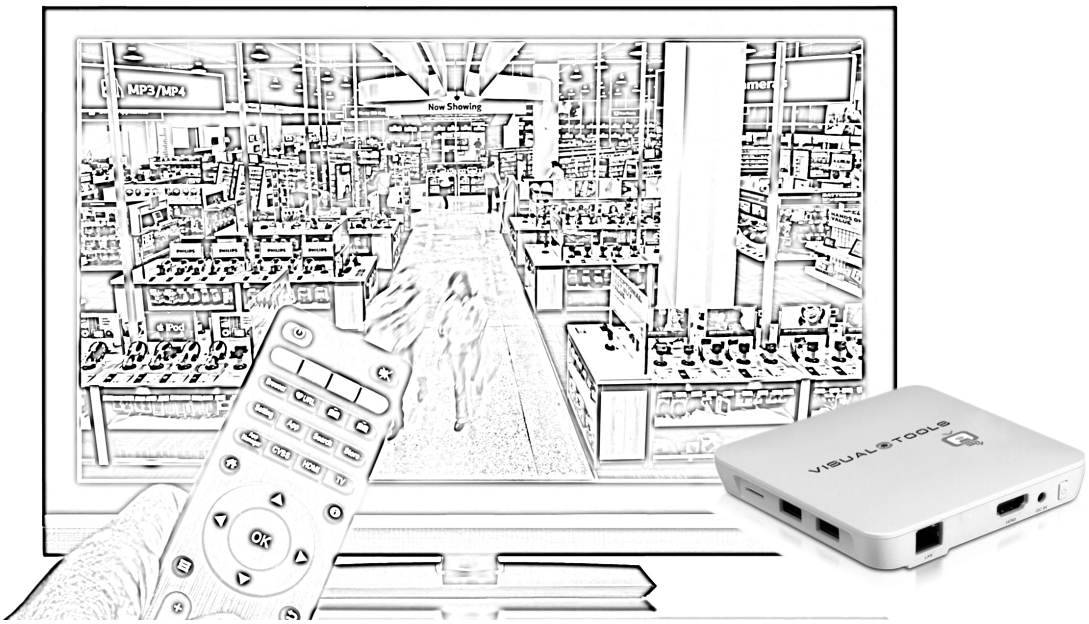
AX-TV

User manual



HDMI video decoder

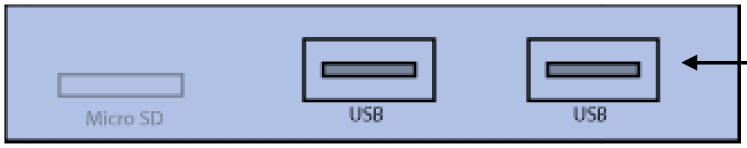
ENGLISH

FRONT VIEW:

Status leds

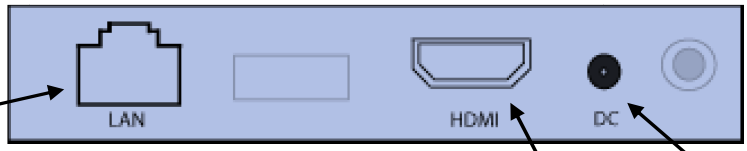
Remote control

SIDE VIEW:



USB ports

REAR VIEW:



Network connection

Power Supply

HDMI video connection

REMOTE CONTROL:

Cursor movement
PTZ: Pan & Tilt

Menu options selection
PTZ: activation

Menu

Exit / Back

Change quad view:
1, 4, 9 & 16
/
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Camera Selection

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1 Contents

AX-TV is a video decoder used to display live video from all kind of AXIS IP cameras, ONVIF cameras (please consult the supported camera's model on the Appendix2 table) as well as VX and NVX video recorders from Visual Tools.

Connect the AX-TV to a TV or a monitor with the HDMI cable and you will have your cameras on screen connected via WIFI or LAN.

The AX-TV can be controlled from its remote control, a web browser, the Supervisor X software or any other software integrated with the AX-TV (there is an integration API available)

Package contents

Open the packaging and check that the following items are included;

- AX-TV Unit
- HDMI cable
- Network cable
- Remote control and batteries
- Power supply

2 Installation and set up

Installation

Connect the unit to the power supply, the HDMI video cable to the monitor/TV and the network cable if the connection is going to be via LAN.

The unit has to be installed in a visible place to be able to command it with the remote control. If you are planning to control the AX-TV by other means you can hide it after the first configuration.

Don't place the unit in a closed place, it is necessary to leave some space for the ventilation.

Start-up

Select on your monitor/TV the HDMI input corresponding to the AX-TV to be able to see the configuration menus on screen.

The first configuration of the unit has to be made with the remote control. You can connect a USB keyboard to ease the input of text.

If you have a LAN connection and your router has DHCP the unit will get connected to the network automatically, without need to edit the network configuration.

If the connection is via Wi-Fi the first thing you have to do is enter the network configuration menu to select your Wi-Fi network and configure its password.

3 Settings

The first configuration of the unit has to be made with the remote control and optionally a USB keyboard to ease the text input. Once the AX-TV is set-up for the first time it is possible to edit or complete the cameras configuration remotely from a web browser.

3.1 Edition with the remote control and the virtual keyboard

Use the arrow buttons **[< ^ >]** to scroll through options, the **[OK]** button to select an option and the **[Exit ⮌]** button to go back.

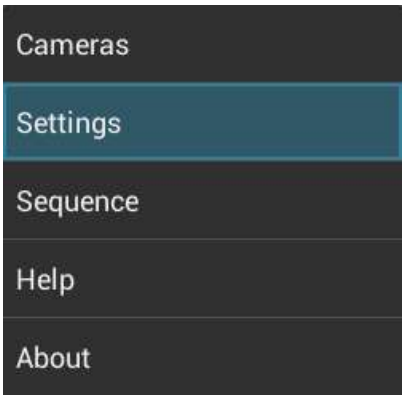
To show the **virtual keyboard**, select a text box and press **[OK]**. The virtual keyboard will be shown on screen. Select the **character key** with the arrow buttons and press **[OK]** to choose. Select the **Next** key on the virtual keyboard to enter the text and move to the next text box. Press **[Exit ⮌]** to exit the virtual keyboard. The numbers can be typed directly with the number buttons of the remote control.

To modify a text it is convenient to place first the cursor where you want to insert characters, or at the end of the text to delete it, and then press [OK] to open the virtual keyboard.

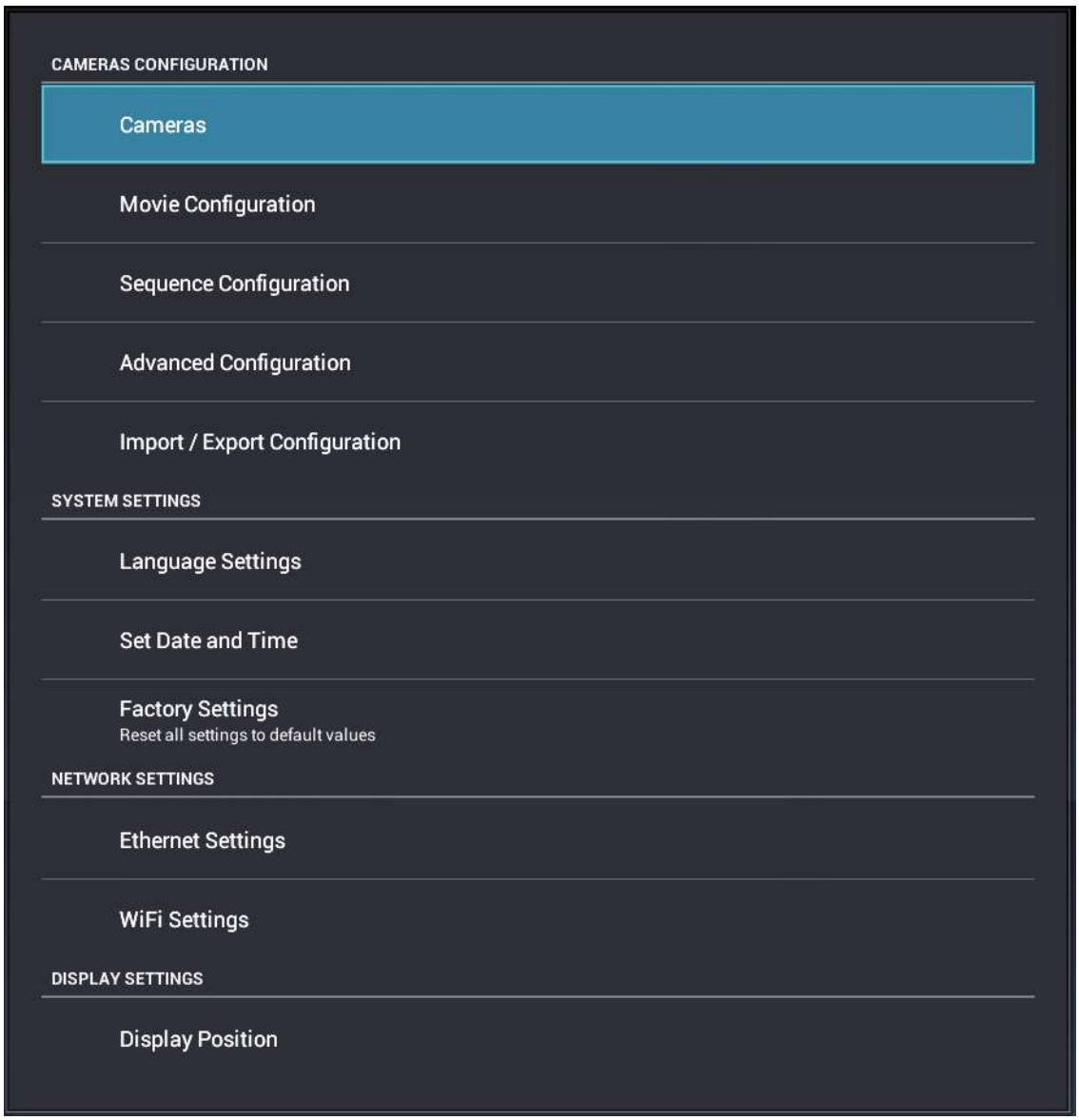
You can use **a mouse and a USB keyboard** connected to the AX-TV to enter the configuration data faster. Bear in mind that only QWERTY keyboards are supported.

3.2 Settings menu

Press the [Menu ☰] on the remote control button to show the main menu options. Enter the **Settings** option.



In the Settings menu there are the following options:



3.3 Network settings

You need to configure the network parameters to connect to the cameras. Choose the connection you prefer, either Ethernet or WIFI, and make sure that the corresponding checkbox is selected or the communications will not be active.

- **Ethernet Settings**

  Menu >> Settings >> Network settings >> Ethernet settings

  Connect the local network cable. The DHCP protocol automatically configures the network parameters. If you want to edit the network parameters select the *Ethernet settings* option and edit the parameters you need.

  Note: the **MAC address** that appears in the lower part of the unit corresponds to the Ethernet connection.

- **Wi-Fi Settings**

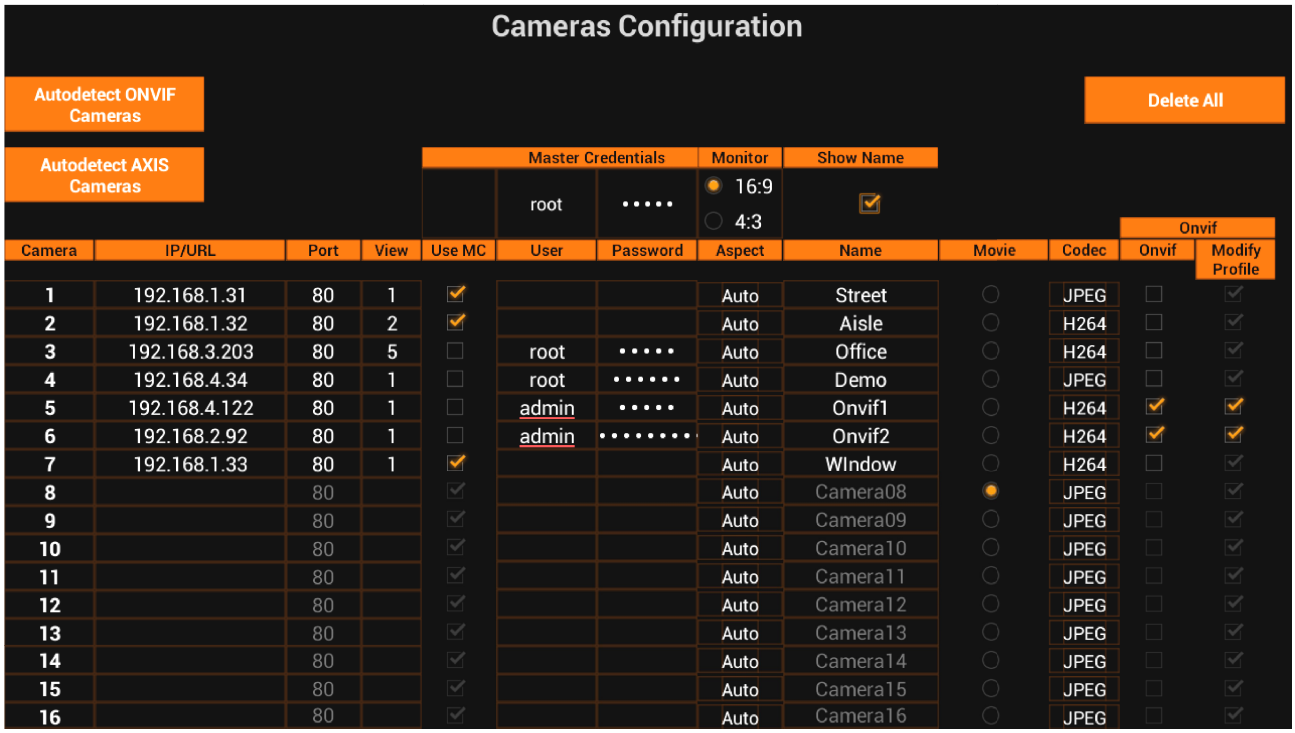
  Menu >> Settings >> Network settings >> WIFI settings

  Select the WIFI network and enter the corresponding password. When the connection is active you will see a *Connected* label under the selected name's network.

3.4 Cameras Configuration

Menu >> Settings >> Cameras configuration >> Cameras

The cameras used by the AX-TV and some display adjustments are defined on this screen.



The unit comes with a sample configuration that you can change. Select the **Delete All** button and press OK: this option deletes the sample cameras and allows you to start with a blank configuration with the default values.

In order to ease the addition of new cameras, it is advisable to enter first the user and password for the **Master Credentials (MC)**. The master credentials are the default user and password that will be used for any new camera unless you uncheck the *'Use MC'* option and enter a particular root and password for the camera.

The **Monitor** option configures the aspect of the AX-TV video output. It is 16:9 by default, but if most of the cameras have a 4:3 aspect it is recommendable to put the monitor in 4:3

The **Show Name** checkbox is used to overwrite the camera names on the video. The button *.com* in the remote control can change its status as well.

You can **add the cameras manually** editing this table or by means of the **auto-detection tool**. You can combine both methods, as well as edit a camera added by auto-detection.

3.4.1 Cameras configuration: Manual edition

The following parameters are needed to set-up a new camera:

IP/URL address of the camera or the VX / NVX recorder you want to display

Port: It is the video TCP port. By default 80 and should only be changed if necessary.

View: A camera may have several extra views, as well a VX/NVX recorder have several video channels. The *View* field specify the view or channel number. The default view is 1.

Credentials: Check *Use MC* to use the master credentials defined for all the cameras, or uncheck it to specify a particular user and password for the camera.

Aspect: The aspect-ratio is set in automatic by default. This way the AX-TV chooses the best resolution for the camera in every moment depending on the viewer size.

Name: You can change the camera name here. To show this name on live video, mark the check-box ***Show Name*** *or press the button* ***[.com]*** on the remote control when the AX-TV is in operation.

Movie: You can select one of the AX-TV channels to show a commercial video instead of a live camera. The configuration of the movie is explained in a later chapter.

Codec: Choose which video format to request the camera: JPEG or H264.

Onvif: Check this option to connect the camera using the Onvif protocols. Otherwise the Axis protocols will be used.

Modify Profile: Check this option to let the AX-TV modify the Onvif profile in the camera to optimize it to the visualization needs. Otherwise the video stream is used as it is configured in the camera. By default this option is checked, and the AX-TV is allowed to modify the Onvif profile video. Uncheck it if for example the camera only has one configurable profile and it is being used by a video recorder.

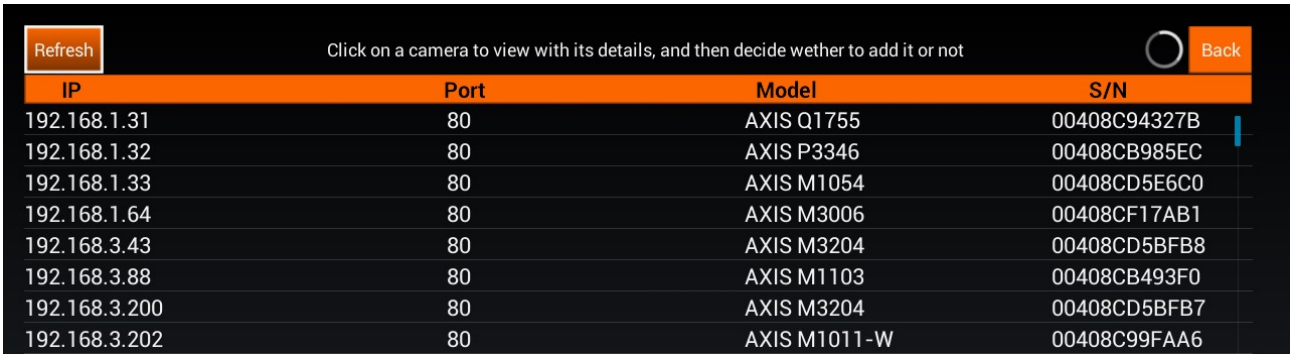
Once finished press the [Exit ⮌] button and wait until the connection to the cameras is checked, and the video is shown on screen. If an error occurs check the camera configuration.

3.4.2 Cameras configuration: Adding cameras with auto-detection

Select Autodetect Axis Cameras or Autodetect Onvif Cameras and you will get a list of the cameras detected in your local network.

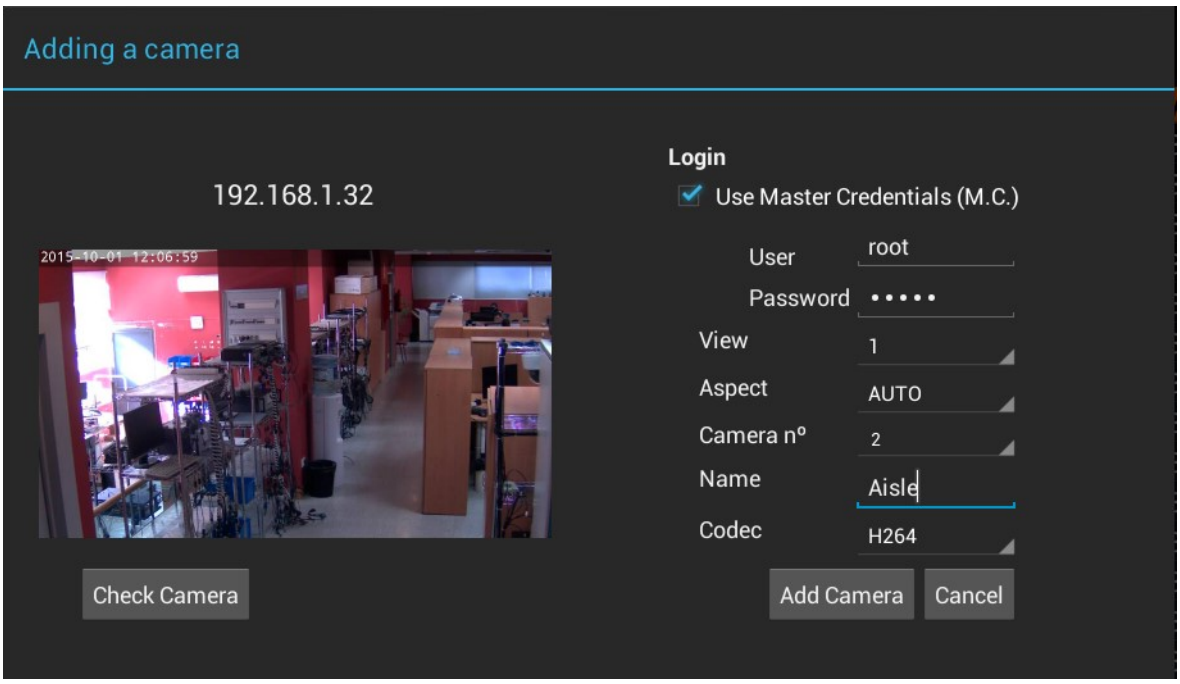
Note: if a camera is not installed in the same network segment of the AX-TV, or it is not detected for any other reason, you can always add it manually as explained in the previous title.

Once the cameras have been detected the result is shown as follows:



If you think there haven't been detected all the cameras, click on Refresh to launch a new autodetection.

Select one camera to display its details:



This screen lets you define the camera configuration, but the IP and port that are autodetected. The parameter **Camera nº** refers to the position of the camera in the list of cameras. The rest of the parameters are explained in the previous title.

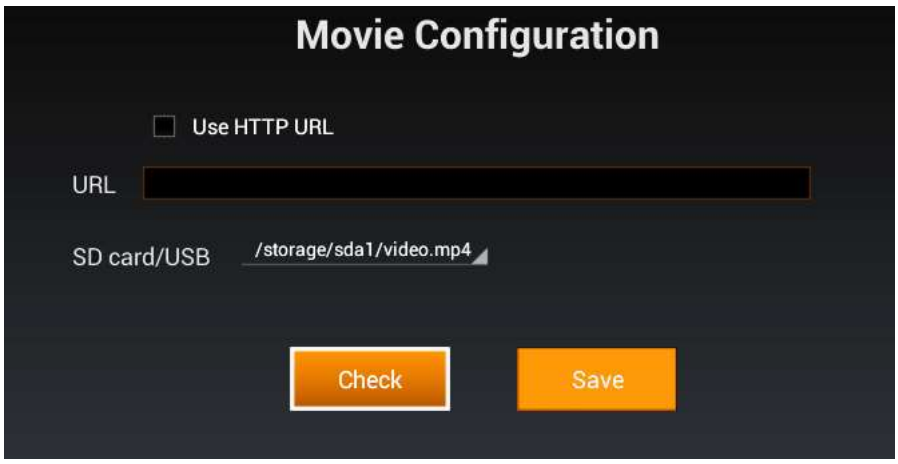
Select **Check Camera** to check the camera configuration and see an image from the camera

Select **Add Camera** to include in the list of cameras of the AX-TV, or select **Cancel** to return to the autodetection list without saving changes.

3.5 Movie Configuration

In this section you can define the movie to playback instead of a camera. This way it is possible to show on screen a commercial video in quadrants among other camera views or in full screen as well.

The selection of the 'camera' that shows the movie is made in the Cameras Configuration screen (Movie option).



The movie has to be a video recorded in .mp4, .mkv, .mpg or .avi format. The recommended resolution is 1280x720 or lower.

Copy the movie into a **microSD** card or a **USB memory** and plug it in the AX-TV. The AX-TV detects the movie formats and shows the compatible files in the drop down list. Choose the video you want to show.

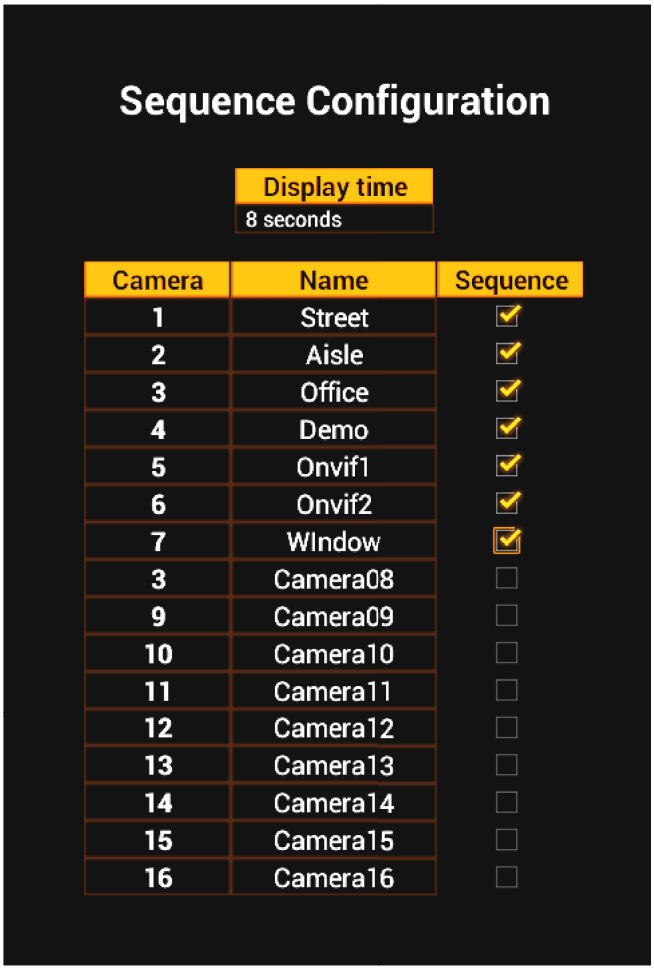
A video from a web server can also be played-back. In this case, check **'Use HTTP URL'** and input the video URL. The URL format will be similar to this one: *http://www.myweb.net/myvideo.mp4*

Once selected the desired video –SD, USB or HTTP-, select **Check** and wait for the video to finish playing completely. Then select **Save** to apply the new movie configuration.

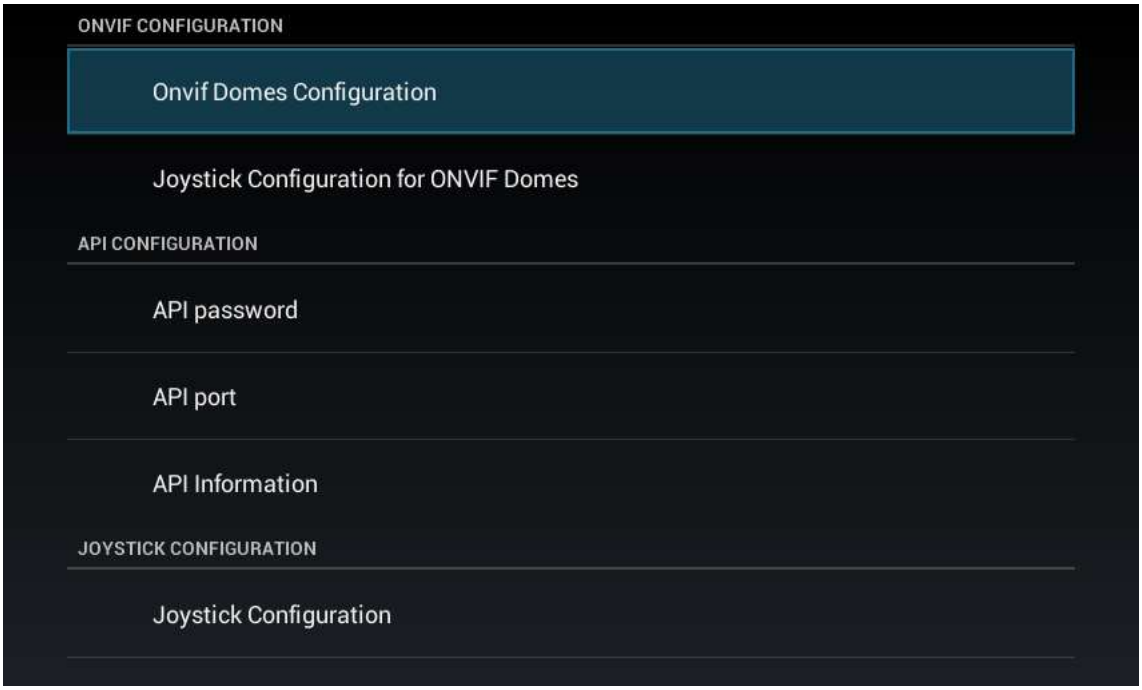
Warning: If you press Save before the movie ends the configuration is not saved.

3.6 Sequence Configuration

You can visualize the cameras **on a sequence**: select the cameras you want to include in the sequence and the display time of each one (5, 8, 12 or 20 seconds).



3.7 Advanced configuration



3.7.1 ONVIF configuration

The ONVIF domes (PTZ cameras) may require some adjustment as each manufacturer may have different responses. In this section you can modify the horizontal speed, vertical speed and the zoom speed for Onvif cameras and the joystick.

3.7.2 API Configuration

The API is an interface to communicate different software applications, like the AX-TV with the Supervisor X or the web interface. To make this communication effective you must set a password and a communication port.

The password by default is **vtapi** and the port **8080**. You can modify the password and the port into the API configuration menu.

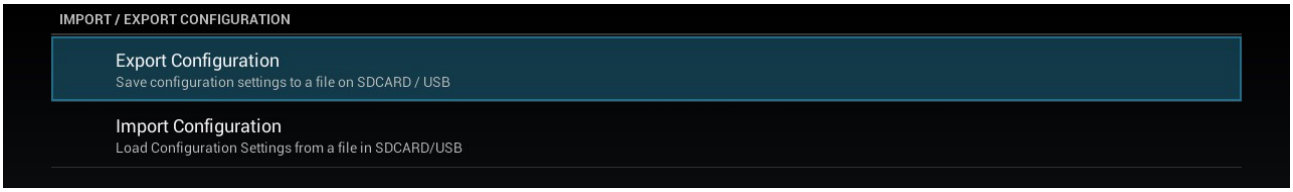
In the **'API Information'** option you can find the current **IP address** of the AX-TV. This IP and port are necessary for a Supervisor X, a web browser or any other application can connect to the AX-TV and command it.

3.7.3 Joystick Configuration

The AX-TV has the possibility to be commanded by a **USB joystick, model Videotec DCZ**. On this screen you can see the joystick status (connected or not). For further information please consult the Appendix 3 of this manual.

3.8 Import / Export configuration

This option eases the camera configuration export and import between AX-TV units, and lets you load the previous configuration after a factory setting.


IMPORT / EXPORT CONFIGURATION
Export Configuration
Save configuration settings to a file on SDCARD / USB
Import Configuration
Load Configuration Settings from a file in SDCARD/USB

You can export the configuration to a microSD card or a USB memory. In case you have connected both types of devices, the USB has the priority.

Select **Export configuration** to start the process. An **axtv.xml** file is exported to the external memory device root. In case there is a file with the same name it will be replaced.

To import a configuration select the **Import configuration** option, the AX-TV will search a file with the same name into the root of the connected device.

3.9 System settings

There are three options in this section:

3.9.1 Language settings

You can choose one of the following languages: English, French, Italian, Portuguese or Spanish.

3.9.2 Set date and Time

3.9.3 Factory settings

This option returns the AX-TV unit to its factory default settings, except for the network configuration, display position, date and time.

If you want to load a complete image of the factory software see the appropriate chapter below

3.10 Display settings

Here you can adjust the size and position of the image on your TV screen by using the arrow buttons [< ^ >]. Use this option only if necessary.

4 Unit operation

Every time the unit starts, if there are cameras configured and network connection, it automatically shows on screen the last view of cameras used.

4.1 Operation with the remote command

Use the numeric buttons **[1 to 16]** to select a single camera on screen.

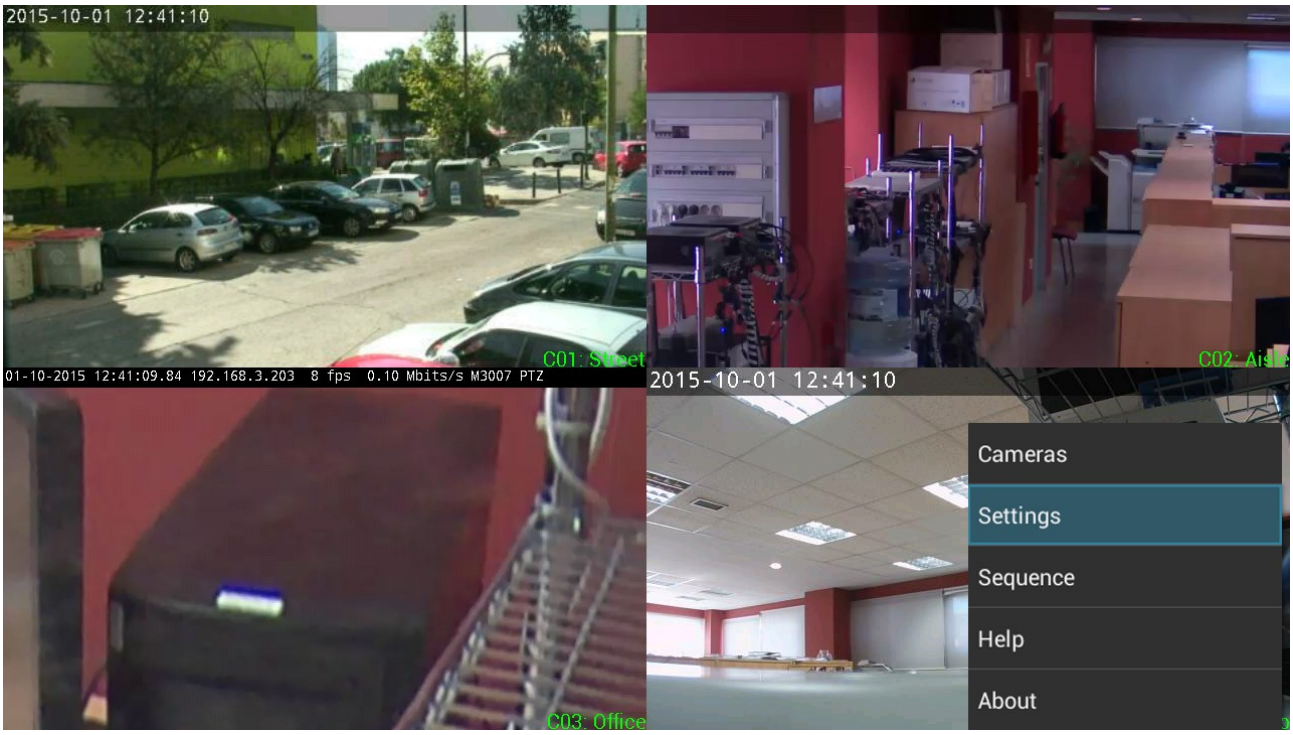
[Zoom-in] and **[Zoom-out]** are used to change the quadrant layout: 1,4,9 or 16 cameras on screen.

Press **[Page]** or **[Page]** to change to the next / previous camera or group of cameras in a quad view.

Press the **[.COM]** button to show or hide the camera names on the video.

4.1.1 Main menu

Press the button **[Menu]** to show on screen the main menu options, which are the following:



Cameras: Shows a list of cameras and allows the user to select one

Settings: Enters the configuration menus

Sequence: Displays the cameras configured in the sequence one by one with the defined time interval. Exit the sequence pressing any button.

Help: Displays an operation guide

About: Shows the software version and the contact info

To exit the menu press **[Exit]** at any time

4.1.2 Dome operation (PTZ)

When a camera is a dome the AX-TV identifies it displaying the dome icon on the screen.

To activate the dome control press the **[OK]** button and the icon will change its appearance.

Use the zoom keys **[Zoom-in]** and **[Zoom-out]** to control the zoom, and the arrow keys **[< ^ >]** to pan and tilt. To disable the dome control press **[OK]** again.

You can also use the Videotec DCZ joystick and or web/mobile interface to control the domes.

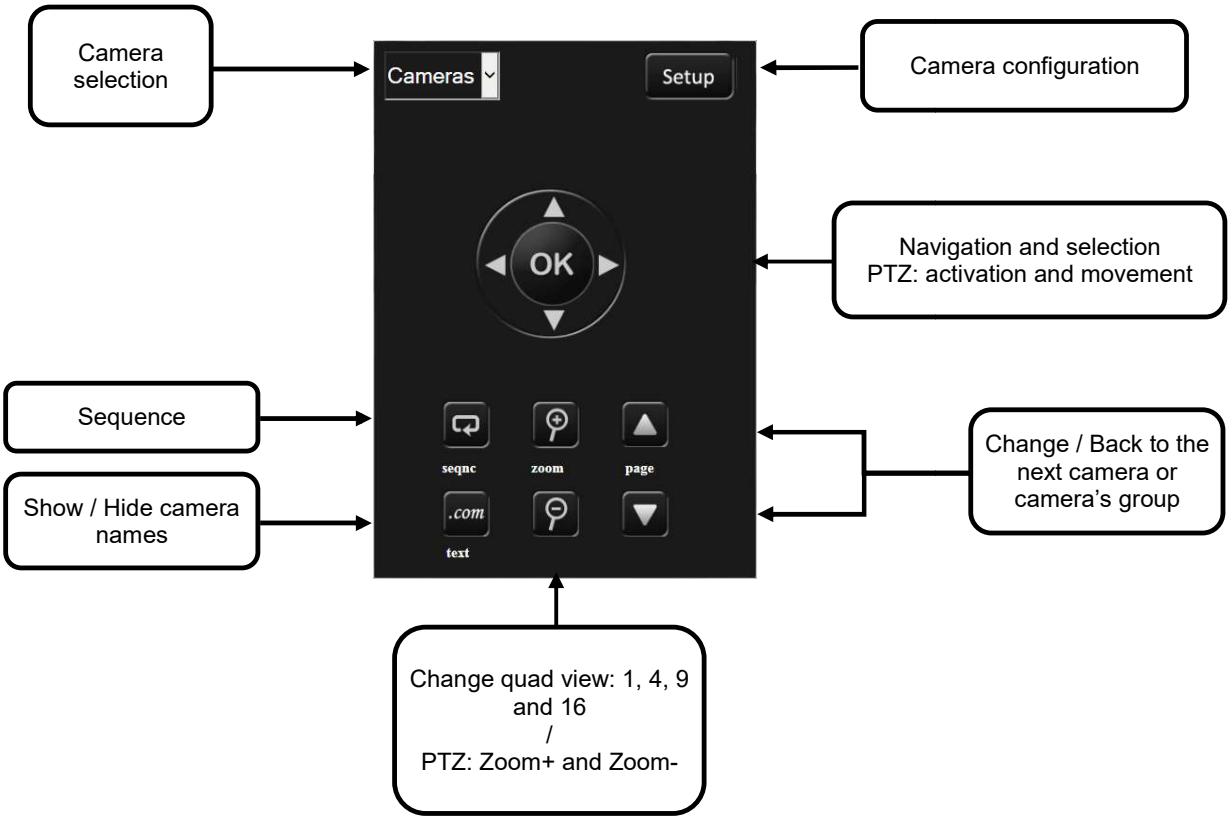
4.2 Operation from a Web browser

The AX-TV can be commanded and configured from a web interface. The connection can be established from a computer, a tablet, or a mobile phone, while the video is always shown on the HDMI monitor connected to the AX-TV.

You need the following data to connect to it, available in the ***Advanced Configuration / API configuration*** section:

- AX-TV **IP address** (in ***API information***)
- **Http port** (in ***API port***). By default **8080**
- API **user and password** (in ***API password***). By default is **api** and **vtapi** respectively.

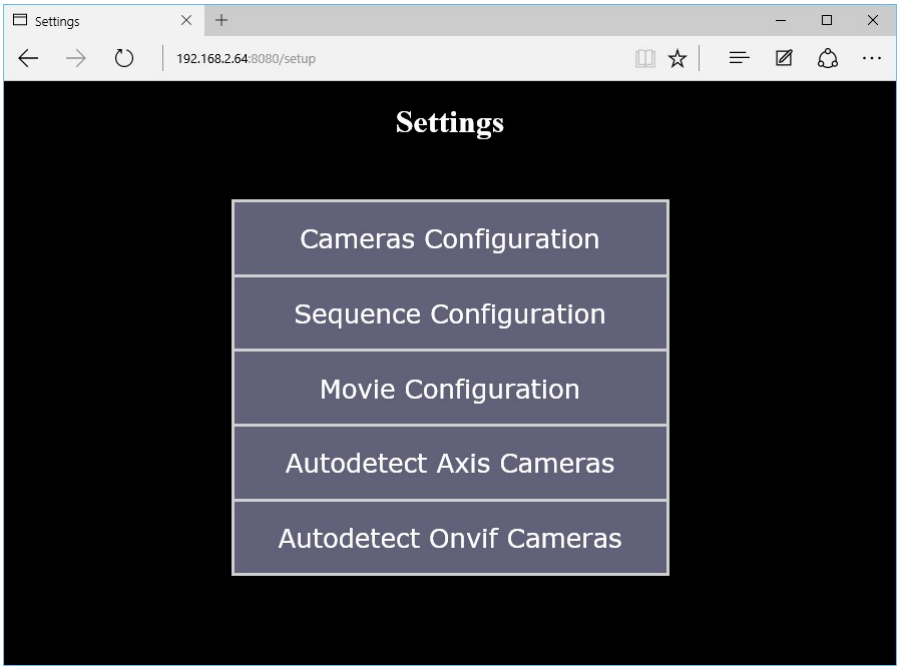
Enter in your browser the IP address followed by the port. For example: **http://192.168.1.10:8080**. A login is then required: enter the user and password. A window with the AX-TV controls will be shown.



This windows works like the AX-TV remote control, but can be used in any mobile device with network connection.

4.2.1 Configuration from a Web browser

Click on the setup button to enter the camera configuration screens of the AX-TV



Any configuration related to the cameras can be edited, but you cannot modify the system settings like the network, language or the advanced configuration.

See the Settings chapter for more details

5 Upgrading and Remanufacturing with the factory image

5.1 Software Upgrading

The unit has a firmware updating system to upgrade the AX-TV. The upgrades can be obtained from our Web site www.visual-tools.com. You will need a USB memory to put the upgrade on the AX-TV. The process is as follows:

1.- **Download** the .ZIP file with the update.

2.- **Unzip** the downloaded file and check it has the .IMG update file and the .TXT documents with instructions.

3.- **Copy the .IMG** file on the **USB memory root**. Warning: make sure that you copy the .IMG file, not the .zip one.

4. - The AX-TV has to be connected to the TV/monitor to follow this process. **Connect the USB memory** with the image file **to the AX-TV**.

5. – **Remove the AX-TV power supply**. Turn the AX-TV upside down and **press** with a sharp object the firmware **upgrade button** marked “upgrade” on the case.

6. – **Connect the power supply again**, **holding the *upgrade* button pressed** for a few more seconds. The screen **will show a menu** with several options.

7. - Select with the remote control buttons the ***'Apply Update'*** option and confirm with **[OK]**.

8. - In the following menu choose the **'Udisc' option** and **select the .IMG** file with the upgrade you want to apply. Press the **[OK]** button to run the upgrade.

9.- When the upgrade is loaded a new menu appears on screen. Restart the unit by selecting the ***'Reboot System Now'*** option and press **[OK]**.The unit reboots, check on your TV that the AX-TV starts properly.

5.2 Factory image

The unit has a complete software image of the date it was manufactured.

The procedure is similar to the upgrading but you don't need to use a USB memory or download the upgrade.

1. - The AX-TV has to be connected to the TV/monitor to follow this process.

2. – **Remove the AX-TV power supply**. Turn the AX-TV upside down and **press** with a sharp object the firmware **upgrade button** marked "upgrade" on the case.

3. – **Connect the power supply again**, **holding the *upgrade* button pressed** for a few more seconds. The screen **will show a menu** with several options.

4. - Select with the remote control buttons the ***Apply Update*** option and confirm with **[OK]**.

5. - In the following menu choose the ***media* option** and **select the default_recovery.IMG** file. Press the **[OK]** button to run the factory image.

6.- When the image is loaded a new menu appears on screen. Restart the unit by selecting the ***Reboot System Now*** option and press **[OK]**.The unit reboots, check on your TV that the AX-TV starts properly.

For any questions or concerns about this process please contact the support department: **support@visual-tools.com.**

Appendix 1: Changing AXIS cameras settings

The Ax-Tv unit will request a video stream from the camera as necessary in each case (resolution, compression, etc.) for optimum operation as digital cameras (VX units) as IP cameras and IP ONVIF cameras.

You have the option to create profiles to adjust the cameras appearance, resolution, compression and image size, only for native AXIS cameras (without ONVIF protocol active), if you deem it necessary to modify the AXIS cameras operation.

You can create up to four profiles that correspond to the four different views that are available on the AX-TV. The profile name is AX-TV x where x correspond to the view type that the Ax-Tv provides (1, 4, 9 o 16 cameras).

To create these profiles you have to access the IP camera **Setup** menu, in the list on the left select **Video & Audio** and then, select **Stream Profiles**.

In this window are the camera list profiles, press the **Add** button to create a new profile.

1. - Into the Image section insert the camera name, AX-TV x and select into **Video Encoding** section the **MPEG** option.

2. - In the Image Appearance section select the resolution. Shown below are the maximum values that can be selected for each profile.

	16:9	4:3
AX-TV1	1280 x 720	800 x 600
AX-TV4	640 x 360	480 x 360
AX-TV9	480 x 270	320 x 240
AX-TV16	320 x 180	240 x 180

Into this section you can increase the compression if necessary.

3. - In the **Video Stream** section you can configure the maximum frame rate via two options, select unlimited or set a limit (maximum is 30 images/frames per second.

4. - In the MJPEG tab you can specify the maximum frame size or select the size by default.

Appendix 3: ONVIF supported cameras

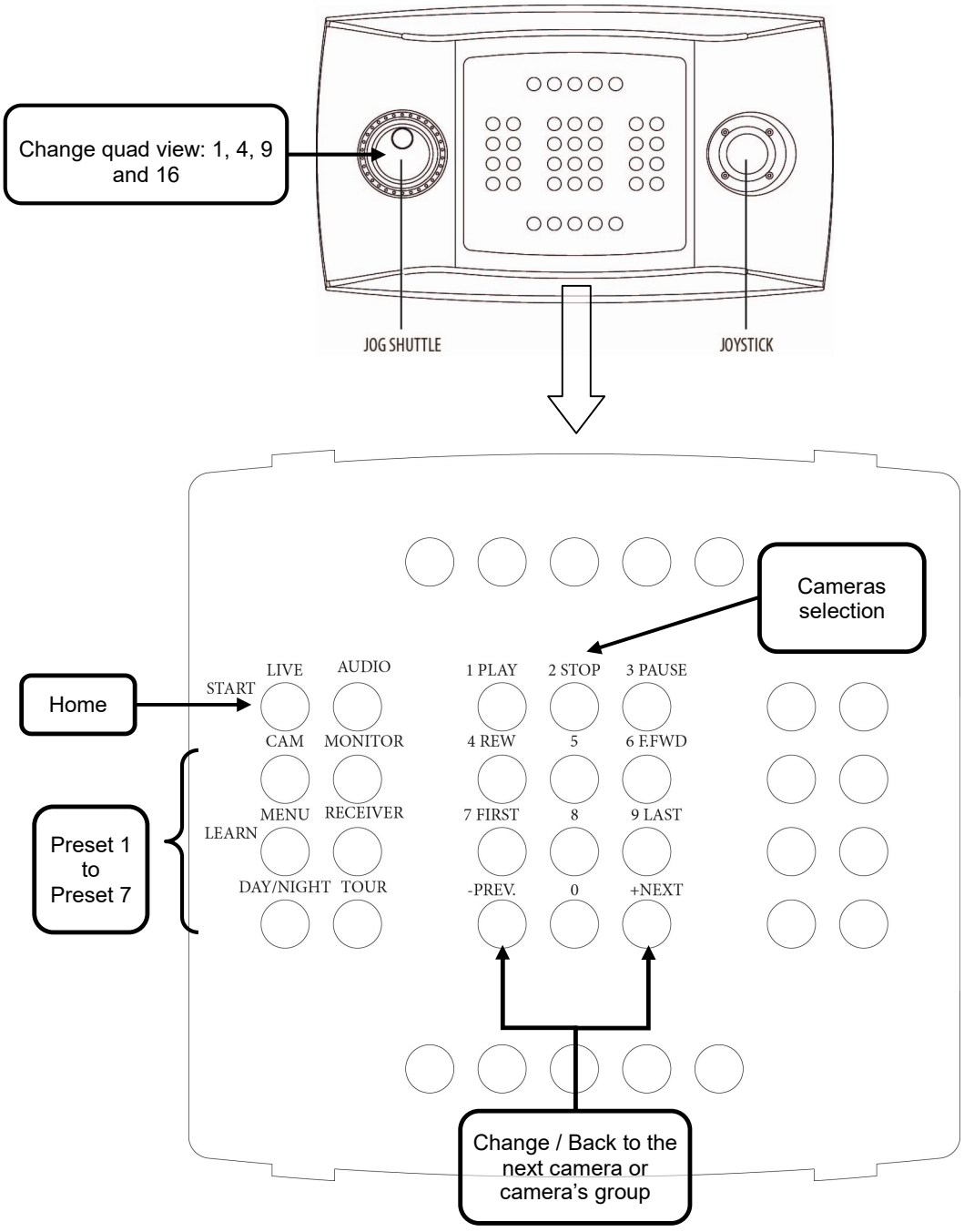
ONVIF supported cameras for this AX-TV version:

ONVIF AXIS cameras
Acti B47
Ademco 068
Avigilon 2.0W-H3PTZ-DP20
D-Link DCS-2132LB1
Hikvision DS-2CD2612F-I
Hikvision DS-2CD2412F-IW
Safire IPC-CV012FHD-H
Samsung SNB-6010
Samsung SND-6084
Samsung SNV-6013
Sony SNC-CH140
Vivotek IP8173H

Other camera models can operate, but there must be tested before to validate its correct operation.

Appendix 3: Operation with the Videotec DCZ joystick

Commands for the Videotec DCZ working with an AX-TV



To use the joystick, connect it to the AX-TV through a USB port and restart the AX-TV.

Appendix 4: Technical specifications

MODEL:	HDMI video decoder
RESOLUTION:	1280 x 720
COMUNICATION:	Ethernet RJ45 10/100M adapter. Built in 802. 11 b/g/n Wi-Fi inside.
VIDEO OUTPUT:	1 HDMI 1.3 output
CAMERAS	AXIS cameras, VX units and ONVIF H264 and JPEG cameras
REMOTE CONTROL	Infrared remote control
DISPLAY:	Cameras one by one or quads 2x2, 3x3 and 4x4
PERFORMANCE	Default refresh rate 16 fps (Q1x1) and 15 fps (Q4x4) Up to 16 cameras in H264
POWER:	External power supply 110-240, power consumption DC 5V 2A
PHYSICAL DATA:	Width: 100 mm x High: 17mm x Depth: 100 mm.

HDMI video decoder
User manual

ENGLISH

DOCAXTVUM00_150923v01027